North Atlantic Regional Medical Command Telemedicine Directorate Briefing Tricare Region 1 Conference

Presented by

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Director, Telemedicine Directorate

Agenda

- Telemedicine: Defined & History
- Mission and Vision
- Project Discussion
  - e-Health Products
  - Research & Development
  - Deployments
- Advantages
- Challenges
- Summary

Telemedicine Defined

Definition: telemedicine is the use of electronic information & communications technologies to provide & support health care when distance separates the participants.

Institute of Medicine 1996

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History

- Nebraska Psychiatry Institute - 1959
- Government funded projects - 1970's
  - Projects stopped as funding ended
- Current explosion since 1990
  - Due to reduced costs and improved technology
- Federal funded programs (> $500 million in 1995)
- NARMC Telemedicine Directorate - 1995
- International program development

Telemedicine Directorate

VISION

- Enables cost-effective and timely access to healthcare regardless of location or patient acuity

MISSION

- Improve access to subspecialty clinical care
- Seek opportunities to reduce the overall cost of healthcare

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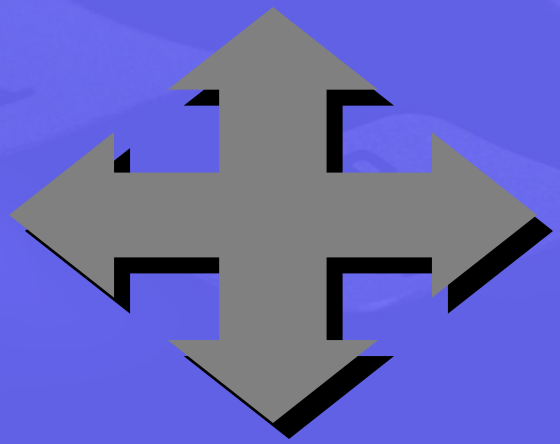
Telemedicine Focus

Humanitarian/ Disaster Assistance

Clinical Consultation



Regional Support

Distance Learning

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E-Health Products

Research & Development

Deployments

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Ask-A-Doc
Overview

Ask-A-Doc is a consultative e-mail service for health care providers using CHCS

- One working day response time
- Subject will always be “Ask-A-Doc”
- Use generic description without patient identifying information
- Submit referrals after coordinating with consulting physician
- Email via CHCS mailman to (75) sub-specialties

new mailboxes - *g.wr ask_a _specialist’*

Ask-A-Doc
Benefits

- Requires minimal cost to implement
- Improves patient care
- Improves patient management/referrals
- Provides positive relationship between NARMC MTFs
  - HCP Education
- Strengthens referral process into MEDCEN's
- Decreases inappropriate consults
- Results published – "Military Medicine" – March 2002

Ask-a-Doc
Top 10 List

Calendar Yr 2000		
SPECIALTIY	**Number of Consults**	**Response Times**
Endocrinology	318	**10:39:16**
Gastroenterology	314	**6:39:46**
OB GYN	185	**19:40:38**
Urology	184	**24:45:21**
Hematology	183	**17:22:57**
Cardiology	166	**77:38:07**
Infectious Diease	161	**12:58:30**
Nephrology	152	**13:26:09**
Dermatology	134	**14:57:11**
Pediatician	113	**24:09:15**
TOTAL	**1910**	**22:36:00**

Ask-A-Doc

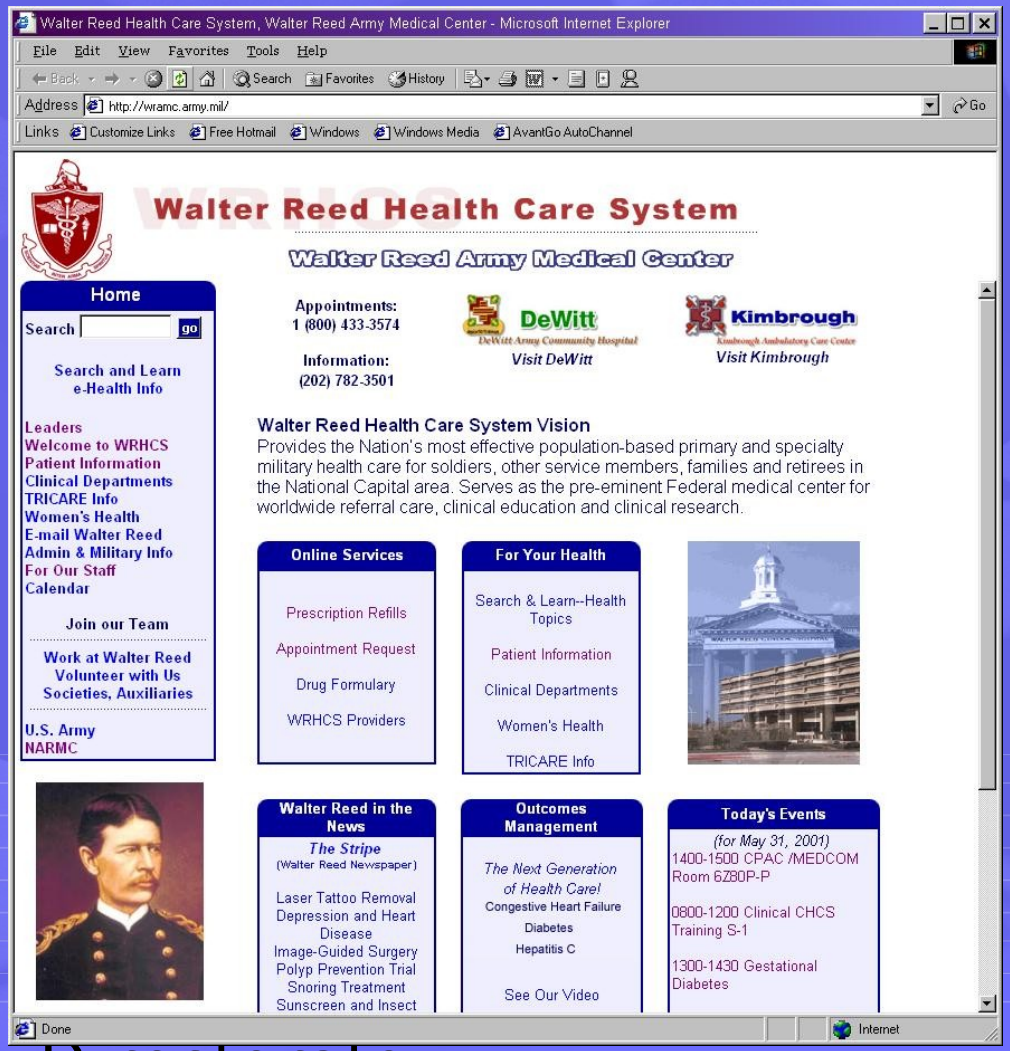
Medical Facility Report

April 98 - December 2000

Referring Medical Facility	Average Response Time	Consults
Walter Reed AMC/National Capitol Area	24:18	2303
West Point-KELLER ACH	15:32	504
Fort Drum-GUTHRIE ACH	27:05	75
Fort Eustis-MCDONALD ACH	11:19	53
Landsthul Germany	30:31	53
Fort Knox-IRELAND ACH	14:40	45
Fort Lee-KENNER ACH	15:29	42
Air Force	19:44	22
Fort Monmouth-PATTERSON ACH	13:37	6
Internet	56:32	6
Heidelberg Germany	9:07	5
Other	25:29	7
Summary Totals	22:35	3121

WRAMC Home Page

- WRAMC Web Page
  - 172,889 files
- NARMC Web Page
  - 34,449 files
- E-Health portal
- Clinical consultation
- Readiness training
- Project coordination
- Continuing education



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WRAMC e-Health Portal

- Developed by the NARMC TMED Directorate
- Established in January 2001
- Enables patients to access the health care network for services via the Internet
- Total on-line transactions for CY01:
  - 6370 prescription refills
  - 596 clinic appointments
  - 30,855 search and learn medical topic requests

Web-Based Applications

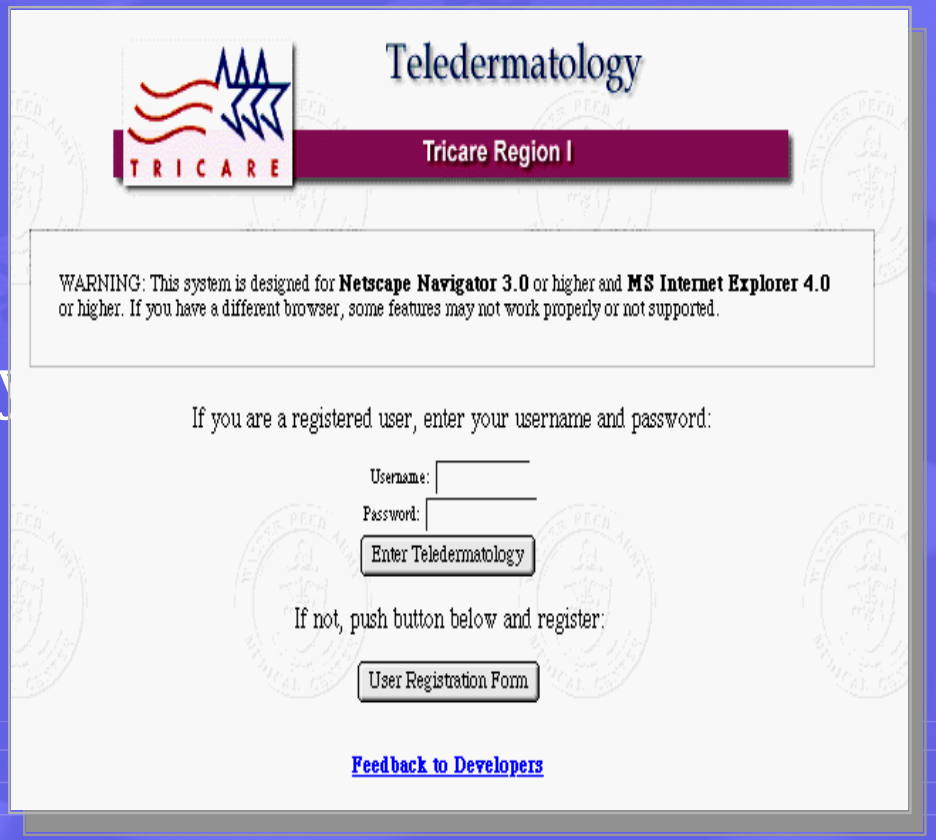
- On-line Appointing
- On-line Prescription Refill
- OR Scheduling Calendar
- TeleDermatology
- TeleNeuropsychiatry
- Tele-Shoe Clinic
- Tele-PFT's
- Drug Formulary

http://www.wramc.army.mil

http://telemedicine.wramc.amedd.army.mil

TeleDermatology

- Uses store & forward technology
- Web-based application
- AMEDD-wide availability
- Tri-Service use in NCA


Teledermatology
TRICARE
Tricare Region I
WARNING: This system is designed for Netscape Navigator 3.0 or higher and MS Internet Explorer 4.0 or higher. If you have a different browser, some features may not work properly or not supported.
If you are a registered user, enter your username and password:
Username:
Password:
Enter Teledermatology
If not, push button below and register:
User Registration Form
Feedback to Developers

TeleDermatology *Facts*

- 1600 consults completed from May 98 - Feb 01
- Quality Control Program initiated
- U.S. Government patent filed
- Diagnostic Concordance study completed
- Cost Effectiveness Analysis completed
- Acquisition Plan for DoD sustainment initiated
- Independent Verification & Validation study completed
- Clinical evaluation study completed
- Centralized Training Archive established (4 CD-ROM set)

Consultants View

Consult #: ME0001
Type: Routine
Patient: Brown, James B.

Submitted: 24-Mar-98 01:26 PM
Status: Pending
FMP: 50 SSN: 500-55-0000

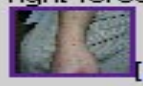
History:
Pt is a 35 y/o White Male with 4 days hx of Localized Growth with Pruritus on Right ventral forearm

Exam:
On Exam, Pt has 2-4 mm Blister on Right ventral forearm

Working Diagnosis:
13 DERMATITIS, CONTACT UNSP

Specific Questions/Additional Relevant Information:
Pt went running on wooded trail

Images
right forearm:



[25%] [50%] [100%] [150%]

More Pt Info

Referring Site: Fort Meade
Created by: CPT Hon Pak
Referring Physician: CPT Hon Pak

Main Menu | Send Amendments | Send Additional Images | Submit Recommendations | Print SF 513

TeleDermatology
Results

	Trad'tl	Tderm
• Avg wait for derm care	48 days	2 days **
• Avg wait for Active Duty beneficiary care	61 days	2 days
• Avg length of derm consult	20 mins	9.6 mins
Resolved at Referring Site via technology		50%

* * Now 24 Hrs – Routine
1 Hr – Urgent

* Based on results of 1997 study bet
Radar Clinic and Walter Reed

TeleDermatology *Results*

Aberdeen	29-Oct-01	49
Afghanistan	15-Mar-02 9test)	0
AP Hill (Not Deployed)	n/a	0
Bolling AFB	22-Nov-99	18
Carlisle Barracks (Derm)	02-J un-98	7
Dover AFB	15-Dec-00	37
Fairfax	17-May-01	58
Fort Belvoir (Derm)	11-Aug-99	39
Fort Bragg	14-Aug-01	3
Fort Detrick	7-Nov-01	29
Fort Dix	8-Apr-02	8
Fort Drum	9-J an-02	66
Fort Drum Connor	12-Feb-01	27
Fort Eustis	n/a	0
Fort Knox	n/a	0
Fort Lee	12-Apr-02	195
Fort NcNair (Not Deployed)	19-Nov-01(test)	0
Fort Meade	10-Dec-01	70
Fort Monmouth	6-Feb-02	28
Fort Myer	8-Apr-02	300
Pax River	27-Apr-01	26
Pentagon (Derm)	19-Oct-99	23
Quantico (Not Deployed)	12-Dec-01 (test)	0
West Point (Derm)	15-Dec-99	6
Woodbridge	5 Oct 01	129
WRAMC	30-Nov-01	6
	TOTALS	1124

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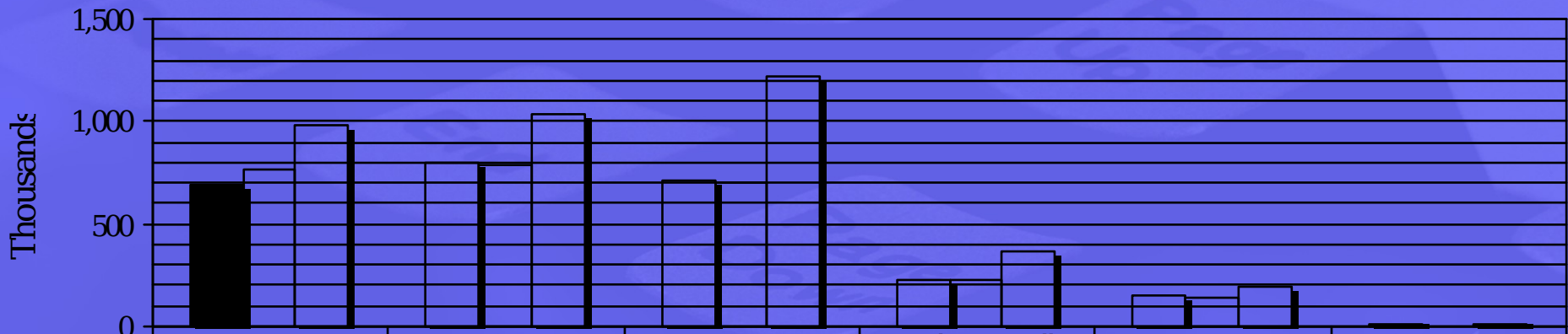
TeleMental Health

- Child Psychiatry – Over 500 sessions since 1999

- Adult Psychiatry - combined Army/Navy effort

- NARMC Tele-Mental Health Consortium is developing a Business Case Analysis evaluating the use of tele-mental health (psychiatry, psychology, social work) services in reducing third party payments for out-sourced medical services

NARMC Mental Health Outsourced Dollars



	Psychiatry	Psychology	Social Worker	Marriage/Family Therapist	Counselor	Pastoral Counselor
1999	686,015	796,213	715,682	226,048	153,527	6,020
2000	763,724	786,265	702,291	229,967	136,527	5,056
2001	985,797	1,032,053	1,214,142	362,043	194,516	7,843

FY 99 Total $2,583,504

FY 00 Total $2,623,560

FY 01 Total $3,796,394

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NARMC Telemedicine Mental Health Capabilities

CY01

	ABERDEEN	CARLISLE	DETRICK	MEADE	BELVOIR	FAIRFAX	WOODBRIDGE	MYER	W. POINT	OTHER*	TOTAL
CLINIC TELECONSULTATION											
Adult Psychology	C	C	C	C	C						1
Adult Psychiatry	C	C	C	C						C	235
Child Adolescent Psychiatry	C	C	C	C							106
Child Adolescent Psychology	C			C	C					C	
Child Adolescent Social Work											
Neuropsychology										C	59
Biofeedback Pain Management										C	3
LeAN3 Weight Management										C	
ADMINISTRATIVE SERVICES											52
Drill Sargeant Packet	C	C	C	C	C					C	
Recruiter Packet	C	C	C	C	C					C	
Medical Boards	C	C	C	C	C					C	
Fitness For Duty	C	C	C	C	C					C	
Soldier Readiness Program										C	
OPERATIONAL SUPPORT											
Combat Stress										C	10
Mental Health Personnel Mentoring										C	3
RESEARCH AND DEVELOPMENT											
Adult Social Work											
Drug/Alcohol Dependency											
Family Advocacy											
Forensic Services											
PLANNED											
Within 12 Months	**LEE**	**DRUM**	**EUSTIS**	**KNOX**	**BRAGG**	**MONMOUTH**					
TELECONSULTATION TOTALS											469

***Other** - Rucker, Germany and Campbell

"C" means Current

Distance Learning

- Uses
  - Specialties
    - Nephrology
    - Neurology
    - Neurosurgery
    - Medicine
    - Nutrition Care
    - Radiology
    - Numerous Others
  - Nursing Education
  - Grand Rounds
- Stats
  - 6 in 1998
  - 403 in 1999
  - 1153 in 2000
  - 437 in 2001

E-Health Products

Research & Development

Deployments

Telemedicine Directorate

TMED R&D

- NARMC TMED Directorate is currently managing over 70 telemedicine and medical informatics projects
- Most projects are externally funded (congressional, P6, P8)
- All research projects complete local IRB approval

NARMC Tele-Consultation Activity

CLINICAL APPLICATIONS	1998	1999	2000	2001	TOTAL
1. Ask a Doc	741	1161	1219	1431	4552
2. Dermatology	327	354	243	398	1322
3. Podiatry/Shoe Clinic			288	269	557
4. Renal Transplant			202	257	459
5. Pulmonary Function Test (PFT)			130	671	801
6. Tumor Boards (West Point, NY)			95	108	203
7. Tumor Board (Germany)			70	72	142
8. Echocardiography			16	142	158
9. Psychiatry (Adult)				421	421
10. Psychiatry (Child)			4	332	336
11. Sleep Evaluation		26	51	45	122
12. Nutrition Care		46	11	46	103
13. Hepatology				41	41
14. Pulmonary/Education				36	36
15. Neuropsychology				87	87
16. Distance Learning	6	493	796	627	1922
17. Joslin Diabetes				284	284
18. Pathology				122	122
18. Neurology (Stroke)				4	4
TOTAL	1074	2080	3125	4983	11672

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Regional Capabilities

	WRHCS									
	FT BELVOIR					FT MEADE				PENTAGON
APPLICATIONS	AP Hill	Woodbridge	Fairfax	DeWitt	Myer	Aberdeen	Detrick	Meade	Carlisle	
Adult Psychiatry						C	C	C	C	C
Allegry/Immun.		C	C	C	C	C	F	C		C
Ask A Doc		C	C	C	C	C	C	C	C	
Child Psychiatry						C		C	C	
Pathology										
Dermatology		C	C	C	C	C	C	C	C	C
Echocardiography				C				F		
Nueropsychology										
Ophthalmology			F	F				F		
Podiatry/Shoe Clinic				F						C
Pulmonary/PFT				C				C		
Sleep Medicine										
Tatoo Removal		C	C	C	C	C	C	C		C
Tumor Board										
VTC/Distance Learning		C	C	C	C	C	C	C	C	C

C - Current
F - Future

Regional Capabilities

	MTF'S							
	Fort Bragg		Fort Drum	Fort Eustis	Fort Lee	Fort Knox	Ft Monmouth	West Point
APPLICATIONS	Womack	Robinson						
Adult Psychiatry			F	F	F			
Allergy/Immun.	C	C		C	C	C	C	C
Ask A Doc	C		C	C	C		C	C
Child Psychiatry			F	F	F			C
Pathology	F					C		
Dermatology	C	F	C	C	C	C	C	C
Echocardiography					F			
Neuropsychology						F		
Ophthalmology				F	F			
Podiatry/Shoe Clinic	F	F						
Pulmonary/PFT					F			
Sleep Medicine								
Tatoo Removal	C	C	C	C	C	C		C
Tumor Board								C
VTC/Distance Learng	C		C	C	C	C	C	C

C - Current
F - Future

MH Program Established
(5 Protocols)

1) Use of VTC to decrease lost work days and enhance force protection in Division Mental Health
2) Computerized Neuropsychological Screening of Army Aviators
3) Implementation and Evaluation of a Web-based Automated Mental Health Intake System
4) Internet Enabled Aviation Neuropsychological Assessment
5) Use of Tele-Mental Health in Consultation Liaison Psychiatry

E-Health Products

Research & Development

Deployments

Telemedicine Directorate

Deployments

- Regional Support
- SMART Missions
  - CONUS/OCONUS
- National Organizations

  (HIMSS, Tri-Care, Primary Care, ATA, BSA Jam)

Regional Support

Regional Support (cont.)

- The Telemedicine Deployment Team:
  - Deploys and sustains developed applications
  - Provides application-specific training
  - Provides technical support
  - Markets on-going initiatives
  - Seeks out uses for emerging applications

SMART Missions

- 29th Infantry Division Soldier Readiness Processing (Fort Dix, NJ)
  - August/September 2001; March 2002
- 48th Combat Support Hospital, Reserve Training
  - April 2002
- Operation Enduring Freedom (OEF)
  - April-May 2002

Special Medical Augmentation Response Team (SMART)

We are one of six…

Location of Teams

SMART Mission

To deploy and provide short duration, medical augmentation to local, state, federal and defense agencies or medical teams responding to disasters, civil-military cooperative actions, humanitarian assistance and/or Weapons of Mass Destruction emergencies in a CONUS or OCONUS setting

SMART Composition

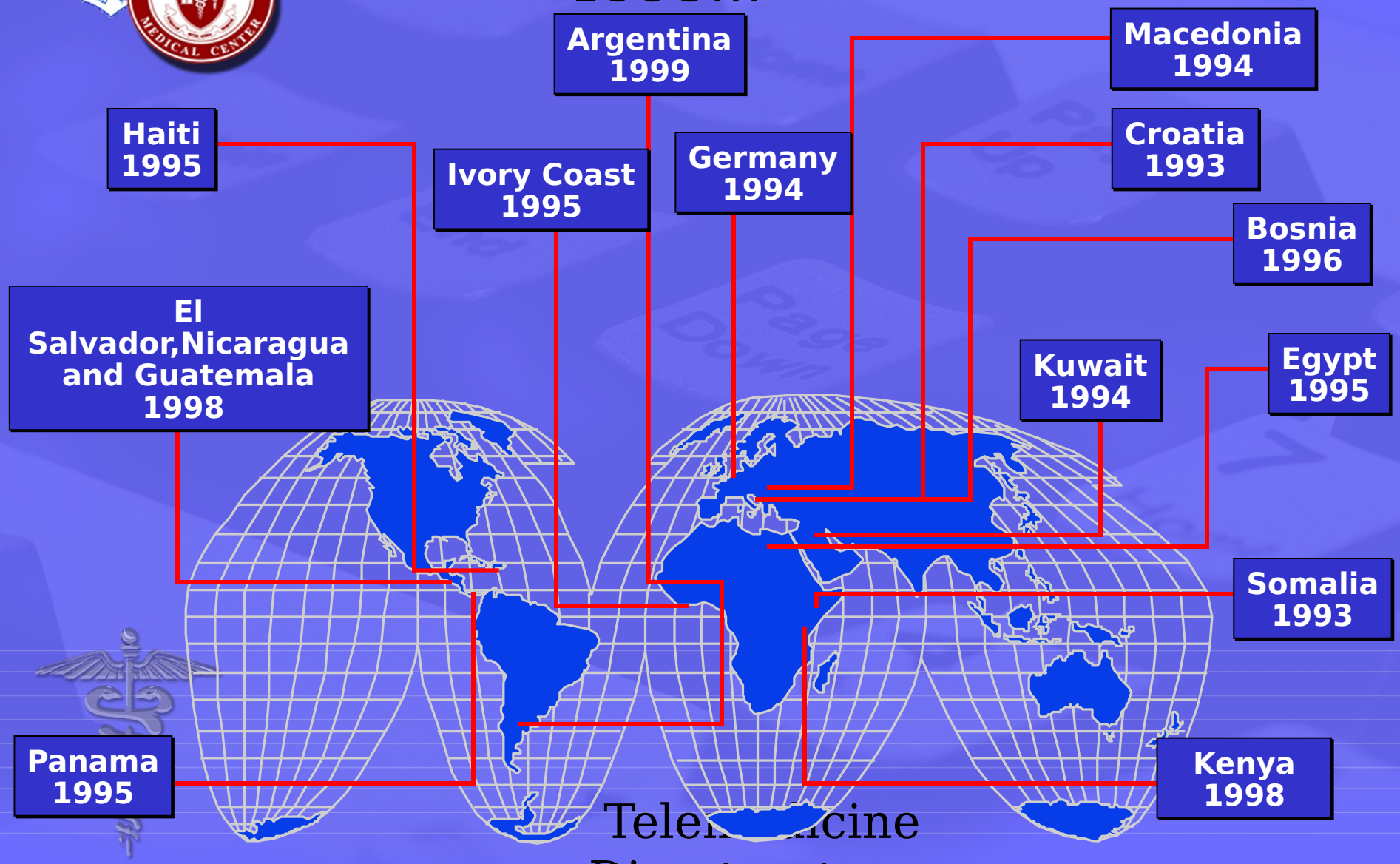
- ✓ (1) Chief Medical Officer (AOC 60-62)
- ✓ (1) Operation Officer (AOC 70D/H)
- ✓ (1) Medical NCO (MOS 91W)
- ✓ (1) Practical Nurse (MOS 91MW6)
- ✓ (1) Computer Specialist (MOS 74B)
- ✓ (1) Communications Specialist (MOS 31 S/U/W)

  * Filled by a contractor

  (1) Historian

* (7) personnel required, (6) assigned

Walter Reed Army Medical Center Telemedicine Deployments since 1993...



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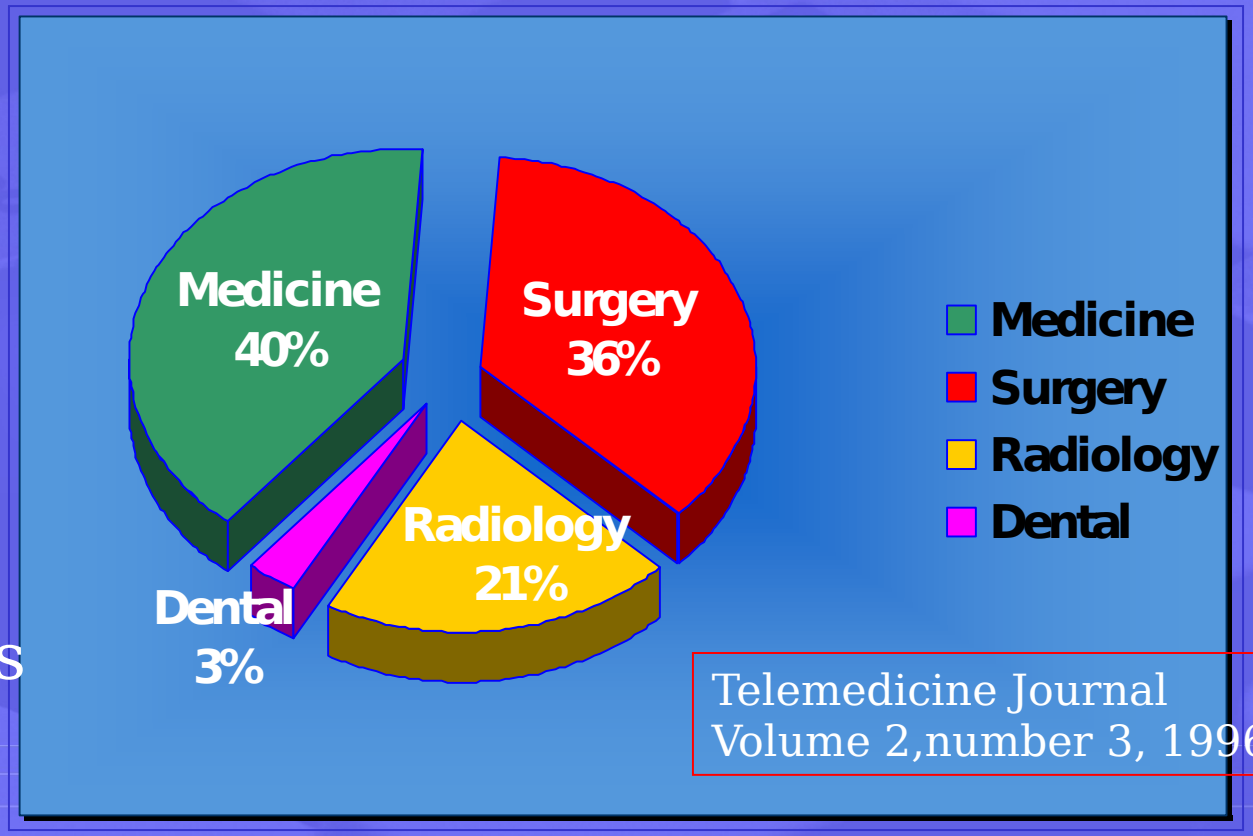
Telemedicine Consults
(Feb 1993 to Feb 1996)

- Most common consult regardless of mission was **Dermatology**
- **Orthopedics** was the most common surgical consult

N= 240 consults



Telemedicine Journal
Volume 2,number 3, 1996

SMART Package

Hurricane Mitch (El Salvador)

Telemedicine Advantages

- Increased operational efficiency
- Rapid information transfer
- Better physician collaboration
- Enables medical education
- Inherent cost and time savings
- Enhances access to healthcare to underserved and remote locations

Telemedicine Challenges

- Lengthy protocol approval process and lack of scientific validation of the technology in the clinical setting
- Physician reluctance to change traditional practice methods
- Re-engineer clinical business practice and medical care
- Reliability of the equipment and infrastructure
- Interoperability with legacy systems
- Lack of electronic patient record system
- Sustained clinical champions/consult managers thru project completion
- Certified or qualified personnel - Temporary employment
- Other - funding, legal issues, licensing, confidentiality

Keys to Success

- Organizational assessment
- End-user assessment
- Identify the requirements
- Project management
- Education and training

Conclusion

- Telemedicine is a growth industry for the NARMC:
- “Telemedicine” must provide continuity over BOTH time and distance
- A consumer-driven revolution in health affairs is just beginning
- Successful organizations will define new new health delivery processes first, then invest in required IT for the whole enterprise
- Emerging defense realities are new & complex, and information dominance is key
- Enterprise-wide strategic planning is key to success

Telemedicine
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